What is claimed is:

1. An artificial disc implant, comprising:

an upper shell having a first portion with a first convex bone contacting surface, a second portion with a second convex bone contacting surface, and a middle portion having a concave bone contacting surface extending between said first portion and said second portion, said upper shell having a cavity formed therein;

a lower shell having a first portion with a first convex bone contacting surface, a second portion with a second convex bone contacting surface, and a middle portion having a concave bone contacting surface extending between said first portion and said second portion, said lower shell having a cavity formed therein; and

a spacer positioned in said cavities of said upper shell and said lower shell.

2. The artificial disc implant of claim 1, wherein:

said upper shell includes at least one rib extending along said first portion and at least one rib extending along said second portion; and

said lower shell includes at least one rib extending along said first portion and at least one rib extending along said second portion.

3. The artificial disc implant of claim 2, wherein each of said ribs includes a tapered leading end and a tapered trailing end.

4. The artificial disc implant of claim 2, wherein said ribs are continuous.

5. The artificial disc implant of claim 1, wherein said spacer is elastic.

6. The artificial disc implant of claim 5, wherein said spacer is made from an elastomeric compound.

7. The artificial disc implant of claim 5, wherein said spacer has a hydrogel core.

8. The artificial disc implant of claim 7, wherein said hydrogel core is dehydratable to reduce the implant height.

9. The artificial disc implant of claim 1, wherein said upper shell and said lower shell are each made from a biocompatible material selected from the group consisting of: stainless steel, titanium, shape memory alloys, polymers, carbon fiber, and porous material.

10. The artificial disc implant of claim 1, wherein:

said upper shell includes a leading end wall and an opposite trailing end wall, each of said upper shell end walls extending along said first portion, said second portion, and said middle portion of said upper shell and further extending towards said lower shell; and

said lower shell includes a leading end wall and an opposite trailing end wall, each of said lower shell end walls extending along said first portion, said second portion,

and said middle portion of said lower shell and further extending towards said upper shell, whereby said end walls of said lower shell and said end walls of said upper shell resist expulsion of said spacer from said cavities of said upper shell and said lower shell.

11. The artificial disc implant of claim 10, wherein:

said leading end and said trailing end of said upper shell are tapered; and

said leading end and said trailing end of said lower shell are tapered.

12. The artificial disc implant of claim 1, wherein:

said cavity of said upper shell is defined by an arcuate surface that substantially parallels said first convex bone contacting surface, said second convex bone contacting surface, and said concave bone contacting surface; and

said cavity of said lower shell is defined by an arcuate surface that substantially parallels said first convex bone contacting surface, said second convex bone contacting surface, and said concave bone contacting surface.

13. The artificial disc implant of claim 1, wherein:

said upper shell includes a leading end wall and an opposite trailing end wall, said upper shell further including an upper flange at said trailing end wall extending upwardly from said concave surface of said middle portion, said upper flange having an aperture therethrough to receive a bone screw to engage said upper shell to an upper vertebral body; and

said lower shell includes a leading end wall and an opposite trailing end wall, said lower shell further including a lower flange at said trailing end wall extending downwardly from said concave surface of said middle portion, said lower flange having an aperture therethrough to receive a bone screw to engage said lower shell to a lower vertebral body.

14. The artificial disc implant of claim 13, wherein said upper flange aperture has a central axis that extends upwardly and towards said leading end at an angle A1 from a longitudinal axis of the implant, and said lower flange aperture has a central axis that extends downwardly and towards said leading end at an angle A2 from the longitudinal axis of the implant.

15. An artificial disc implant, comprising:

an upper shell having a leading end, a trailing end, and an arcuate upper bone contacting surface extending therebetween, said upper shell having a cavity formed therein opposite said upper surface, said upper shell further including at least one rib extending upwardly from said upper surface and between said leading end and said trailing end;

a lower shell having a leading end, a trailing end, and an arcuate lower bone contacting surface extending therebetween, said lower shell having a cavity formed therein opposite said lower surface, said lower shell further including at least one rib extending downwardly from said lower surface and between said leading end and said trailing end; and

a spacer positioned in said cavities of said upper shell and said lower shell.

16. The artificial disc implant of claim 15, wherein said at least one rib of said upper shell includes three ribs and said at least one rib of said lower shell includes three ribs.

17. The artificial disc implant of claim 15, wherein:

said leading end and said trailing end of said upper shell are tapered; and

said leading end and said trailing end of said lower shell are tapered.

18. The artificial disc implant of claim 17, wherein:

said leading end and said trailing end of said at least one rib of said upper shell are tapered; and

said leading end and said trailing end of said at least one rib of said lower shell are tapered.

19. The artificial disc implant of claim 15, wherein:

said upper shell has a first height between said upper surface and a lower edge of said upper shell;

said lower shell has a second height between said lower surface and an upper edge of said lower shell; and

said spacer being constrained in said cavities of said upper shell and said lower shell, said spacer further having an unconstrained height between said lower edge of said upper shell and said upper edge of said lower shell.

20. The artificial disc implant of claim 19, wherein said unconstrained height of said spacer is greater than the combination of said first height and said second height.

21. The artificial disc implant of claim 19, wherein said spacer includes opposite concave sidewalls extending between said lower edge of said upper shell and said upper edge of said lower shell.

22. An artificial disc implant, comprising:

an upper shell having a leading end, a trailing end, and an upper bone contacting surface extending therebetween, said upper shell further including a lower edge extending about a cavity opposite said upper surface, said upper shell including at least one projection extending downwardly from said lower edge;

a lower shell having a leading end, a trailing end, and a lower bone contacting surface extending therebetween, said lower shell further including a top edge extending about a cavity opposite said lower surface, said lower shell including at least one recess extending downwardly from said upper edge, said at least one recess alignable with said at least one projection of said upper shell; and

an elastic spacer positioned in said cavities of said upper shell and said lower shell, wherein said at least one projection is received in said at least one recess when the implant is compressed, thereby limiting the shear stress in said spacer.

23. The artificial disc implant of claim 22, wherein:

said upper shell includes a leading end wall, an opposite trailing end wall, and a pair of opposite sidewalls extending between said leading end wall and said trailing end wall, said lower edge extending about said sidewalls and said end walls; and

said lower shell includes a leading end wall, an opposite trailing end wall, and a pair of opposite sidewalls extending between said leading end wall and said trailing end wall, said upper edge extending about said sidewalls and said end walls.

24. The artificial disc implant of claim 23, wherein:

said at least one projection includes a projection at each of said sidewalls and said end walls;

said at least one recess includes a recess at each of said sidewalls and said endwalls, said recesses alignable with a corresponding one of said projections.

25. The artificial disc implant of claim 22, wherein said upper surface of said upper shell is arcuate and said lower surface of said lower shell is arcuate.

26. The artificial disc implant of claim 22, wherein said upper surface of said upper shell is substantially flat and said lower surface of said lower shell is substantially flat.

27. An artificial disc implant, comprising:

an upper shell having a cavity defined by a first partially cylindrical lobe, a second partially cylindrical lobe, and a middle portion extending therebetween, said upper shell further including an upper flange at said trailing end extending upwardly from said trailing end at said middle portion, said upper flange having an aperture therethrough to receive a bone screw to engage said upper shell to an upper vertebral body;

a lower shell having a cavity defined by a first partially cylindrical lobe, a second partially cylindrical lobe, and a middle portion extending therebetween, said lower shell further including a lower flange at said trailing end extending downwardly from said trailing end at said middle portion, said lower flange having an aperture therethrough to receive a bone screw to engage said lower shell to a lower vertebral body; and

a spacer positioned in said cavities of said upper shell and said lower shell.

28. The artificial disc implant of claim 27, wherein said upper flange aperture has a central axis that extends upwardly and towards said leading end at an angle A1 from a longitudinal axis of the implant, and said lower flange aperture has a central axis that extends downwardly and towards said leading end at an angle A2 from the longitudinal axis of the implant.

29. The artificial disc implant of claim 27, wherein:

said upper shell middle portion includes a concave surface extending between said first and second lobes of said upper shell; and

said lower shell middle portion includes a concave surface extending between said first and second lobes of said lower shell.

30. The artificial disc implant of claim 27, wherein:

said upper shell includes at least one elongated rib extending between said opposite ends along said first lobe and at least one elongated rib extending between said opposite ends along said second lobe; and

said lower shell includes at least one elongated rib extending between said opposite ends along said first lobe and at least one elongated rib extending between said opposite ends along said second lobe.

31. The artificial disc implant of claim 27, wherein:

said upper shell includes a leading end wall and an opposite trailing end wall, each end wall extending between said first lobe and said second lobe; and

said lower shell includes a leading end wall and an opposite trailing end wall, each end wall extending between said first lobe and said second lobe.

32. An artificial disc implant, comprising:

an upper shell having a cavity defined by a first partially cylindrical lobe, a second partially cylindrical lobe, and a middle portion extending therebetween;

a lower shell having a cavity defined by a first partially cylindrical lobe, a second partially cylindrical lobe, and a middle portion extending therebetween; and

a spacer positioned in said cavities of said upper shell and said lower shell.

33. The artificial disc implant of claim 32, wherein:

said upper shell includes a leading end wall and an opposite trailing end wall, each of said end walls extending between said first and second cylindrical lobes; and

said lower shell includes a leading end wall and an opposite trailing end wall, each of said end walls extending between said first and second cylindrical lobes.

34. The artificial disc implant of claim 32, wherein said spacer includes a first spacer and a second spacer, wherein said first spacer is longer than said second spacer.

35. The artificial disc implant of claim 34, wherein said first spacer and said second spacer are interconnected by an intervening portion extending therebetween.

36. The artificial disc implant of claim 32, wherein said spacer includes a first spacer and a second spacer, wherein said first spacer of has a height greater than a height of said second spacer.

37. The artificial disc implant of claim 36, wherein said first spacer and said second spacer are interconnected by an intervening portion extending therebetween.

38. The artificial disc implant of claim 32, wherein said spacer includes a first spacer and a second spacer each having a tapered height for insertion anteriorly into a disc space to establish lordosis.

39. The artificial disc implant of claim 32, wherein:

said upper shell has a first height between an upper surface and a lower edge of said upper shell;

said lower shell has a second height between a lower surface and an upper edge of said lower shell; and

said spacer being partially constrained in said cavities of said upper shell and said lower shell along said shell height, said spacer further having an unconstrained height between said lower edge of said upper shell and said upper edge of said lower shell.

40. The artificial disc implant of claim 39, wherein said unconstrained height of said spacer is greater than the combination of said first height and said second height.

41. The artificial disc implant of claim 32, wherein:

each of said lobes of said upper shell includes at least one rib extending upwardly therefrom; and

each of said lobes of said lower shell includes at least one rib extending downwardly therefrom.

42. The artificial disc implant of claim 41, wherein each of said ribs is continuous along the length of said lobe.

43. A method for inserting an artificial disc implant into a spinal disc space, comprising:

accessing the disc space;

inserting a sleeve adjacent the disc space, the sleeve having a working channel extending between a proximal end and a distal end;

preparing an implant insertion location in the disc space through the sleeve;

providing an implant having an upper shell, a lower shell, and an elastic spacer between the upper shell and the lower shell;

applying a compressive force to the implant to compress the elastic spacer between the upper and lower shells;

inserting the implant in the working channel of the sleeve; and

pushing the implant through the working channel and into the implant insertion location in the disc space.

44. The method of claim 43, wherein providing an implant includes providing the implant with a substantially cylindrical shape.

45. The method of claim 44, wherein:

accessing the disc space includes accessing the disc space from a posterior approach; and

the sleeve includes a cylindrical working channel.

46. The method of claim 45, further comprising:

accessing the disc space at a second location;

inserting a sleeve adjacent the disc space at the second location, the sleeve having a cylindrical working channel extending between a proximal end and a distal end;

preparing a second implant insertion location in the disc space through the sleeve;

providing a second implant having an upper shell, a lower shell, and an elastic spacer between the upper shell and the lower shell;

applying a compressive force to the second implant to compress the elastic spacer between the upper and lower shells;

inserting the second implant in the working channel of the sleeve; and

pushing the second implant through the working channel and into the second implant insertion location in the disc space.

47. The method of claim 43, wherein the sleeve is a double barrel sleeve having a pair of adjacent working channels.

48. The method of claim 47, wherein providing an implant includes providing the implant with the upper shell and the lower shell, each shell including a pair of partially cylindrical lobes interconnected by an intermediate portion, the implant being configured for insertion through the adjacent working channels of the sleeve as a single unit.

49. The method of claim 47, wherein accessing the disc space includes accessing the disc space from a lateral approach.

50. The method of claim 47, wherein accessing the disc space includes accessing the disc space from an anterior-lateral approach.

51. The method of claim 47, wherein accessing the disc space includes accessing the disc space from an anterior approach.

52. A method for inserting an artificial disc implant into a spinal disc space, comprising:

accessing the disc space;

preparing an implant insertion location in the disc space;

providing an implant having an upper shell, a lower shell, and an elastic spacer between the upper shell and the lower shell, the elastic spacer having a dehydratable hydrogel core;

dehydrating the hydrogel core to reduce the spacer height between the upper and lower shells;

inserting the implant into the disc space; and

rehydrating the hydrogel core to expand the spacer in the disc space until the upper and lower shells contact an adjacent vertebral body.

53. The method of claim 52, further comprising:

inserting a sleeve adjacent the disc space, the sleeve having a working channel extending between a proximal end and a distal end; and

inserting the implant includes inserting the implant through the working channel of the sleeve.